

CURRICULUM STANDARD

Effective Term
Fall 2008
[2008*03]

Curriculum Program Title	Alternative Energy Technology: Biofuels	Code	A20130
Concentration	(not applicable)		

Curriculum Description

The Alternative Energy Technology: Biofuels curriculum is designed to provide individuals with the educational foundation and technical skills necessary to obtain employment in the biofuels industry or to create a new business dealing with biofuels.

Course work includes general education, alternative energy resource management, chemistry, industrial safety, and an array of coursework specific to all sectors of the biofuels industry.

Graduates of the curriculum should qualify for numerous positions within the industry. Employment opportunities include, but are not limited to, plant technician, plant manager, lab technician, sales manager, process coordinator, fuel purchaser, or business owner.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204 (3)]

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*

- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.

Major Hours

[ref. 23 NCAC 02E.0204 (3)]

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** *(if applicable)*. A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

Alternative Energy Technology: Biofuels (A20130)

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <i>Courses required for the diploma are designated with *</i> <i>Courses required for the certificate are designated with ^</i> Required Courses: *^ ALT 110 Biofuels 3 SHC *^ ALT 120 Renewable Energy Technology 3 SHC *^ ALT 210 Biofuels II 4 SHC *^ ALT 211 Biofuels Analytics 4 SHC * ALT 230 Biofuels Waste Management 2 SHC Required Subject Areas: * Chemistry. Select 4 SHC: CHM 131 Intro to Chemistry 3 SHC CHM 131A Intro to Chemistry Lab 1 SHC CHM 151 General Chemistry I 4 SHC	20 SHC	20 SHC	14 SHC
B. CONCENTRATION <i>(Not applicable)</i>			
C. OTHER MAJOR HOURS <i>To be selected from the following prefixes:</i> AGR, ALT, AUT, BIO, BPM, BPR, BTC, BUS, CHM, CIS, COE, CTC, DDF, EGR, ELC, ELN, ENV, HET, HYD, ISC, MAC, MEC, MNT, PAD, and WLD <i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i>			